

IMPRESSION MATERIALS AND TECHNIQUES

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- ▣ DEF: it is the negative reproduction of the prepared and unprepared teeth with their surrounding oral tissue
- ▣ When the impression is poured with dental stone a positive replication of the mouth is done which is called a “cast”
- ▣ REQUIREMENTS OF AN IDEAL IMPRESSION MATERIAL:
 - 1- fluidity or semisolid when placed into the mouth
 - 2- reasonable working and setting time
 - 3- easy to manipulate
 - 4- accurate and able to reproduce fine details

5- dimensionally stable

6- non toxic/irritant with an acceptable taste

7- compatible with die and stone material

Is there an ideal impression material??

NO

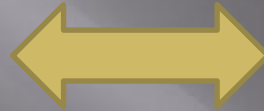
Nothing mankind created is 100%

CLASSIFICATION

IMPRESSIONS

INELASTIC

- PLASTER
- IMP COMPOUND
- WAXES
- ZnO & EUGENOL



ELASTIC

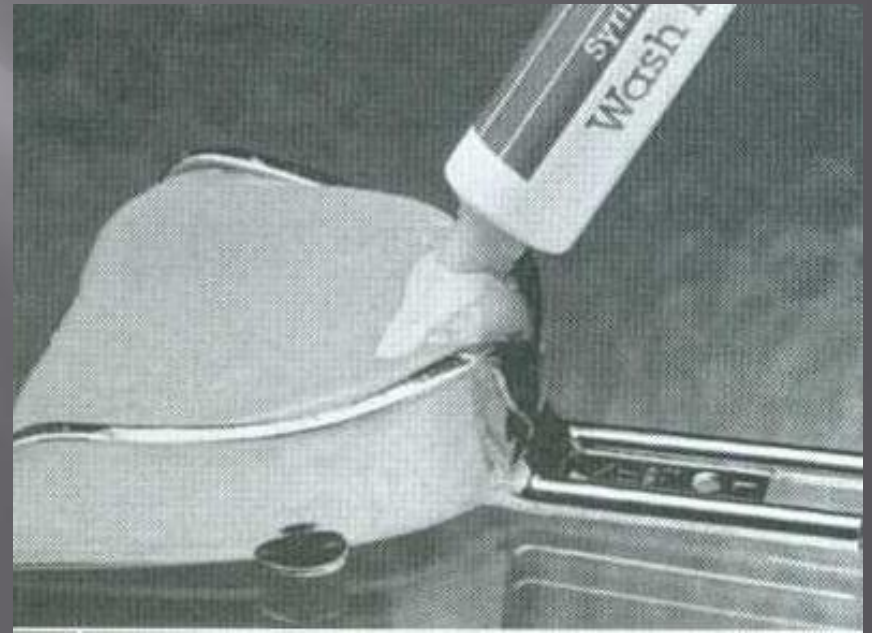
- HYDROCOLLOIDS
(AGAR, ALGINATE)
- ELASTOMERS

AGAR AGAR

SPECIAL EQUIPMENT



PLACEMENT OF
MATERIAL

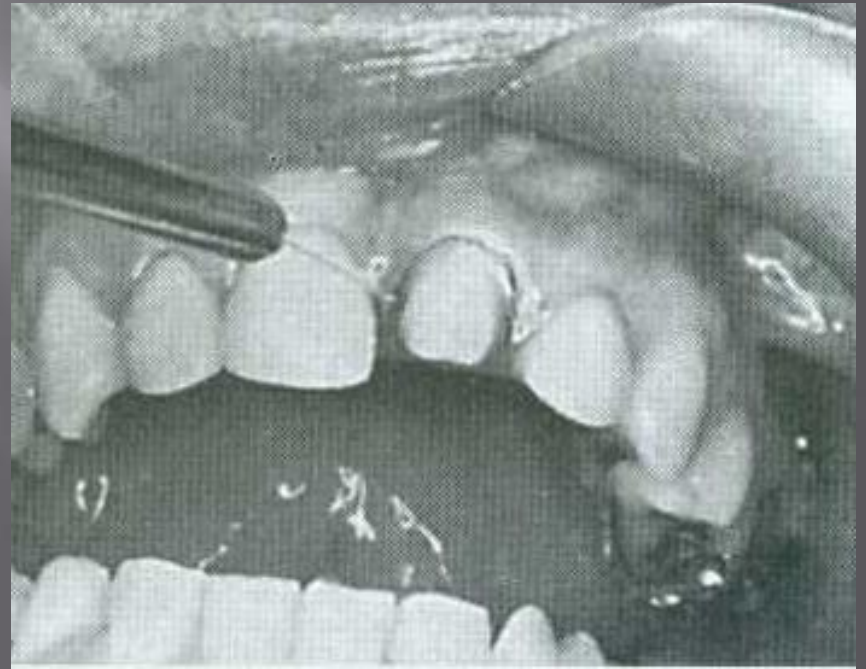


AGAR AGAR

TEMPERING BATH

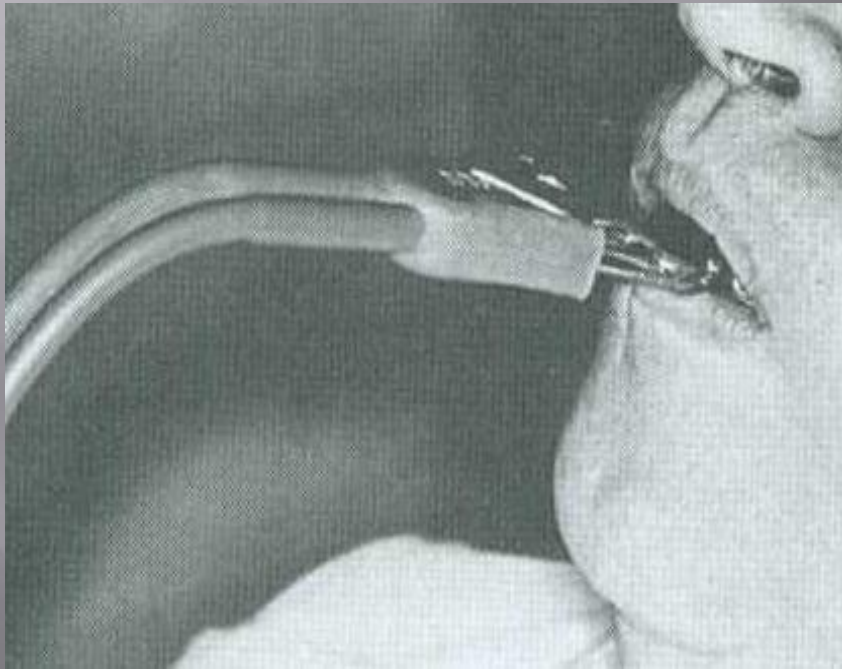


HYDRATION OF TISSUE

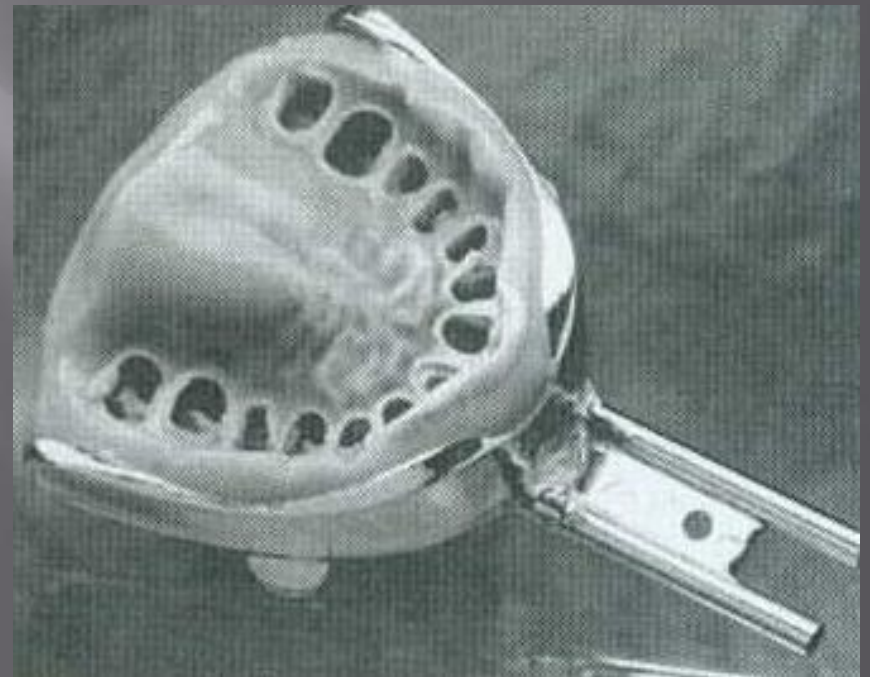


AGAR AGAR

COOLING OF TRAY
INTRA-ORALLY



FINISHED IMPR



ELASTOMERIC IMPRESSIONS

- ▣ They are a collection of monomers, polymers, fillers that change into a rubbery like material by a polymerization rxn.
- ▣ Condensation or Addition polymerization
- ▣ Class. according to chemistry:
 - Polysulphide
 - Cond. Silicone
 - Add. Silicon
 - Polyether

- ▣ Class. according to viscosity
 - Putty (75% filler)
 - High
 - Medium
 - Low/light

POLYSULPHIDES

- ❑ No longer on the market as it had a long setting time (up to 15 mins), bad odour, dimensionally unstable as the by-product is water.
- ❑ Available in all consistencies
- ❑ Hydrophobic in nature
- ❑ Stains clothes (PbO_2)
- ❑ High tear strength

Base and catalyst



CONDENSATION SILICONE

- ▣ Cheap and available in all consistencies
- ▣ Poor stability as there is alcohol as a by-product so should be immediately
- ▣ Can use the putty/wash technique
- ▣ Reasonable tear strength

Putty and catalyst



ADDITION SILICONE

- ▣ Has no byproducts so there is excellent stability.
- ▣ Earlier addition silicone produced H_2 , was delayed. Pl was added that absorbed the gas.
- ▣ Multiple pours can be done
- ▣ Available in all viscosities
- ▣ Hydrophilic
- ▣ Expensive
- ▣ Can't be electroplated, gloves can retard setting, moderate stiffness

Cartilage/gun system



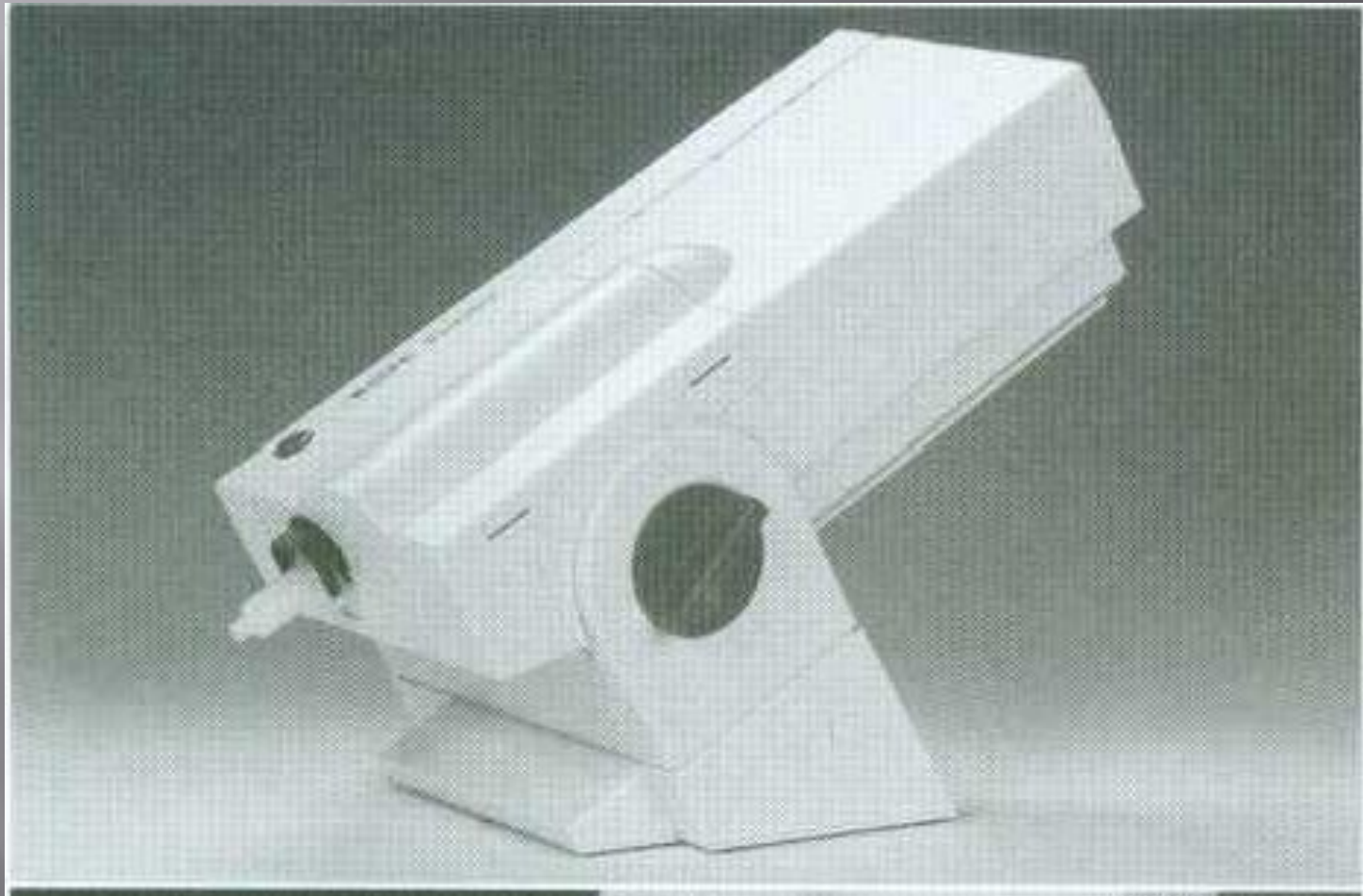
POLYETHERS

- ▣ No by-products, excellent stability
- ▣ Short working time
- ▣ Very stiff (difficult impression removal from patient's mouth and cast)
- ▣ Comes in medium viscosity only
- ▣ Newer versions has a light body and has reduced stiffness
- ▣ Need special tray (shellac base plate, acrylic (self or heat) or visible light polymerized material)

Most famous polyether



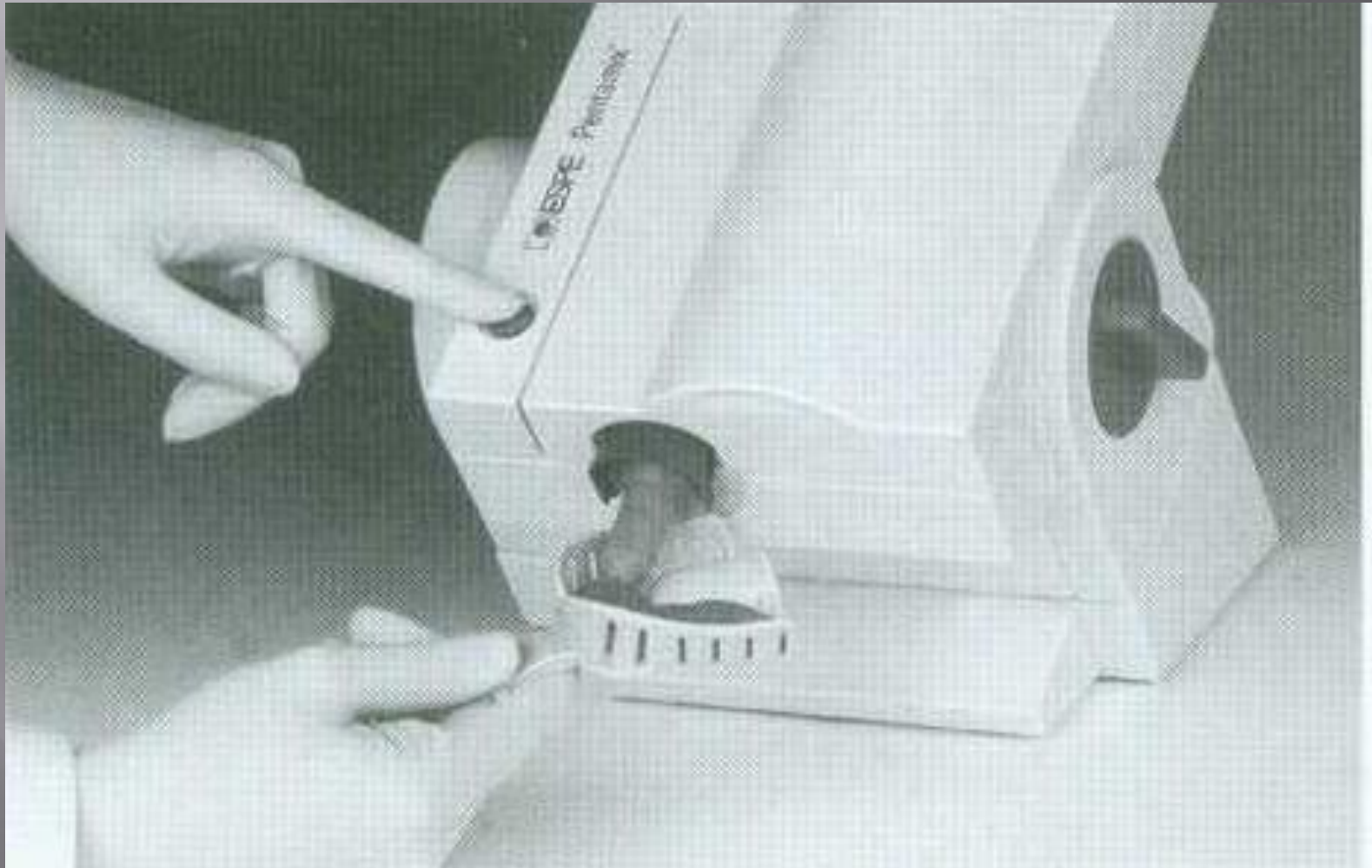
Machine mixing system (PentaMix introduced in mid 90s)



Foil cartilages especially for the dispenser



Loading in tray (8000 EGP)

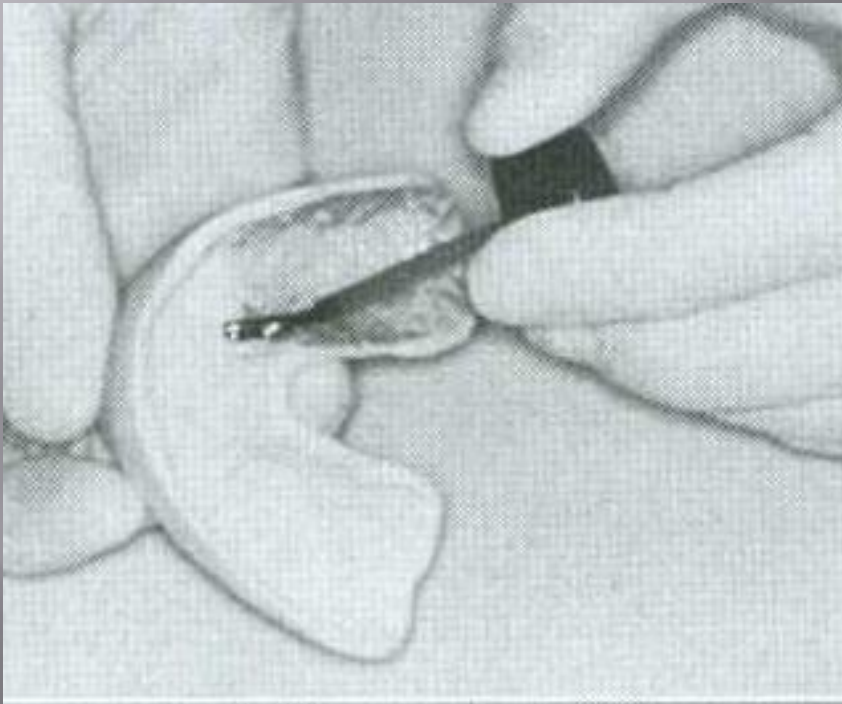


IMPRESSION TECHNIQUES

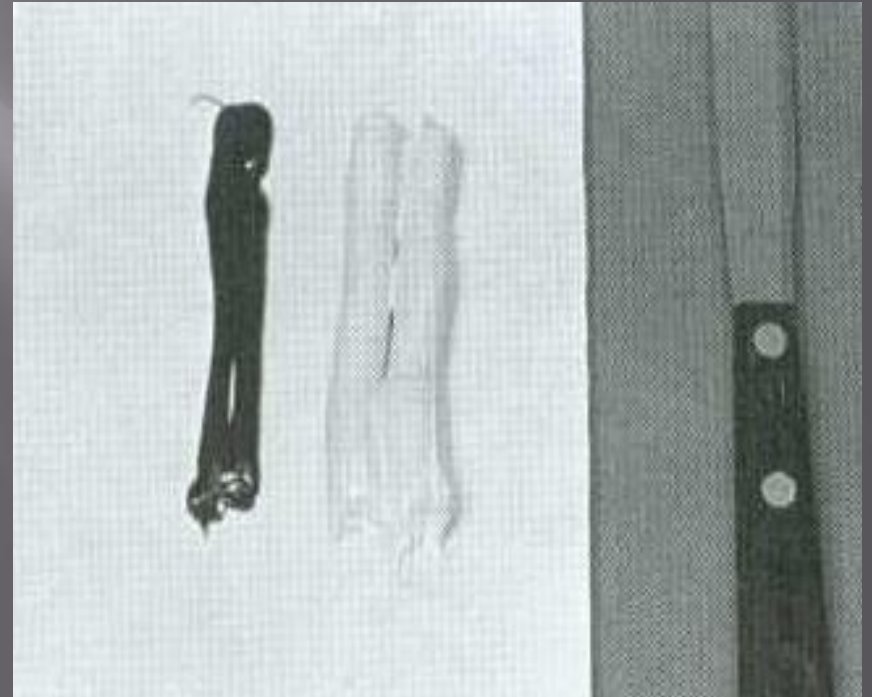
- ▣ INDIVIDUAL COPPER BAND IMPR
- ▣ MONOPHASE IMPR (SINGLE STEP)
- ▣ DOUBLE MIX (SINGLE STEP)
- ▣ DOUBLE MIX (TWO STEP OR PUTTY/WASH)

MONOPHASE SINGLE STEP

ADHESIVE IS PAINTED
ON TRAY

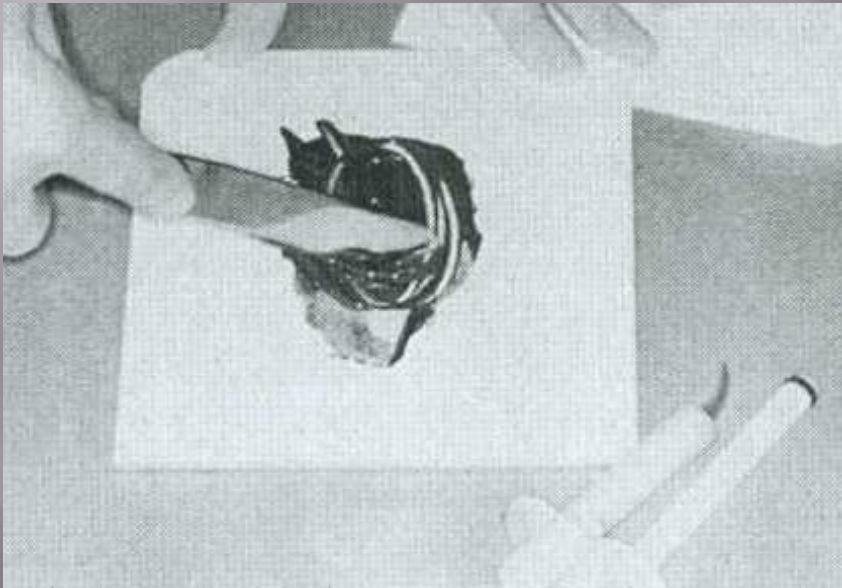


TWO EQUAL PARTS OF
BASE AND CATALYST

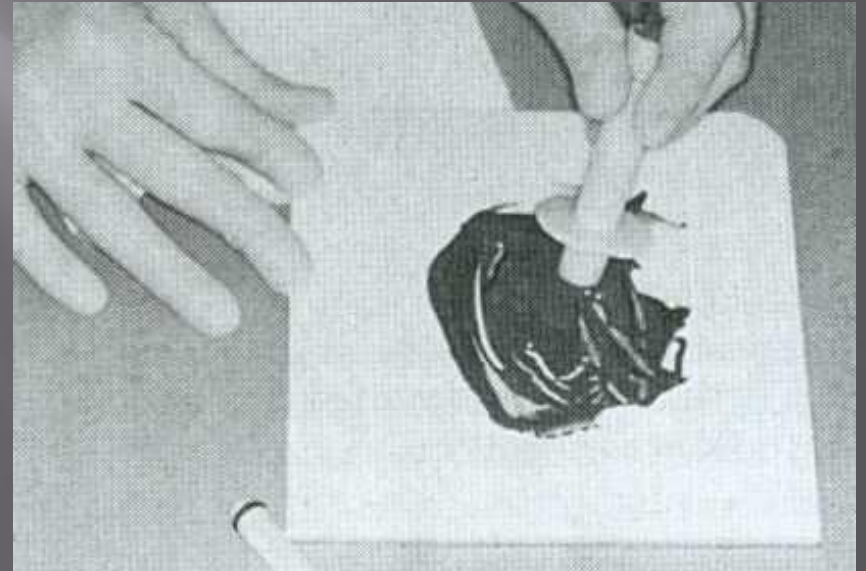


MONOPHASE SINGLE STEP

MIXING OF ELASTOMER

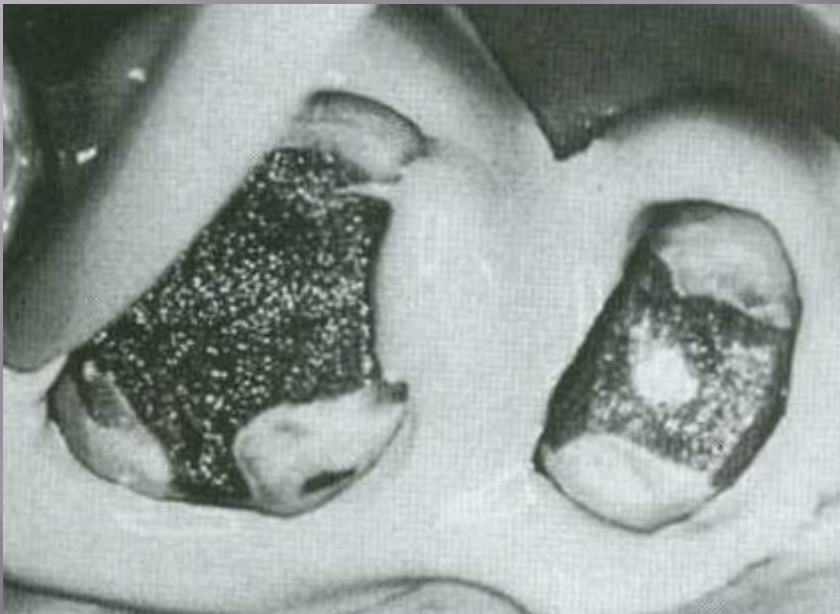


PART IS PLACED INTO
SYRINGE



MONOPHASE SINGLE STEP

INJECTION AROUND
PREPARED TEETH



REST OF MATERIAL PLACED IN
TRAY THEN PLACED MOUTH

